

## **REMARKS**

Claims 11-16 and 19-30 are pending in the application. Claims 20, 23-25, and 28 are withdrawn as being directed to nonelected species. In the Final Office Action mailed November 19, 2009, claim 13 is objected to because of an informality. Claims 11, 14-16, and 19 are rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement. Claims 12, 13, 15, 21, 22, 26, 27, 29, and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. An Applicant-Initiated Interview was conducted on May 14, 2010.

### **I. Summary of Applicant-Initiated Examiner Interview**

An Applicant-Initiated Interview was conducted on May 14, 2010. The Applicants greatly appreciate the courtesy extended to the Applicants' representative by the Examiner during the Interview. During the Interview, the Applicants' proposed claim amendments and new concerns raised by the Examiner were briefly discussed. It was agreed that the Applicants would file a response with RCE in order to submit the amendments as proposed and address the additional concerns raised by the Examiner.

### **II. Amendment and Response to Claim Objections**

Claim 13 is objected to because of an informality, the recitation of "error-containing ones". The Applicants have herein amended claim 13 to adopt the Examiner's suggestion and recite "error-containing nucleic acid molecules". No new matter is added by these amendments. Entry of these amendments and withdrawal of the objection to claim 13 is therefore respectfully requested.

### **III. Amendment and Response to Rejections under 35 U.S.C. 112, first paragraph**

Claims 11, 14-16, and 19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement, for allegedly containing subject matter which is not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. As a preliminary matter, the Applicants note that, while claims 14-16 and 19 are listed as being rejected under this section, no explanation of the reason for rejection of these claims is given. It is

presumed in this response that claims 14-16 and 19 are therefore rejected solely for being dependent upon a rejected base claim. Clarification of this matter is respectfully requested.

In particular, independent claim 11 is rejected because the previous amendment changed the recitation in claim 11 from “the relative amount of any error-containing nucleic acid molecules” to “the percentage of any error-containing nucleic acid molecules” and the passages of the Specification suggested by the Applicants allegedly fail to support this claim limitation. The Applicants respectfully traverse the rejection, and note that the concept of a “percentage” is notoriously well-known in the art, and is additionally in common usage, with the same definition, in the English language generally. The Applicants are therefore entitled to use such a term according to its common dictionary definition, whether or not the term is specifically used in the Applicants’ Specification. Withdrawal of the rejection is therefore respectfully requested.

Furthermore, in order to more quickly resolve this matter, the Applicants have herein amended claim 11 to return to the language of the original claim 11, reciting a “the relative amount of any error-containing nucleic acid molecules”. Support for this amendment is found in original claim 11. No new matter is added by this amendment, entry of which is respectfully requested. The Applicants note that the language recited in original claim 11 was not previously the basis of a rejection or objection, and therefore respectfully submit that this amendment resolves the present rejection. Reconsideration and withdrawal of the rejection of claim 11, as amended, under 35 U.S.C. 112, first paragraph, is therefore respectfully requested. Furthermore, since claims 14-16 and 19 depend from currently amended independent claim 11, which is in condition for allowance, dependent claims 14-16 and 19 are therefore also in condition for allowance. Reconsideration and withdrawal of the rejection of claims 14-16 and 19 under 35 U.S.C. 112, first paragraph, is therefore also respectfully requested.

#### **IV. Amendments and Response to Rejections under 35 U.S.C. 112, second paragraph**

Claims 12, 13, 15, 21, 22, 26, 27, 29, and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite. The Applicants respectfully traverse the rejections. As a preliminary matter, while claims 22 and 30 are listed as being rejected under this section, no explanation of the reason for rejection of these claims is given. It is presumed in this response that claims 22 and 30 are rejected solely for being dependent upon a rejected base claim. Clarification of this matter is respectfully requested.

In particular, independent claim 12 is rejected as being indefinite “in view of step c) because it is unclear that error-free nucleic acid molecules in steps b) and c) are identical or not”. Independent claim 12 has herein been amended in order to adopt the Examiner’s suggestion and add “the” before the recitation of “error-free nucleic acid molecules” in step c). No new matter is added by this amendment, entry of which is therefore respectfully requested. Reconsideration and withdrawal of the rejection of claim 12, as amended, under 35 U.S.C. 112, second paragraph, is therefore respectfully requested.

Independent claim 13 is rejected as being indefinite “in view of step d) because step d) appears to be unnecessary.” The Applicants respectfully respond that step c) recites the creation of error-free nucleic acid sequences, while step d) recites the creation of error-free nucleic acid molecules from the error-free nucleic acid sequences of step c). Step d) is therefore not unnecessary, as it is the mechanism by which the error-free portions of error-containing nucleic acid molecules may be salvaged to create additional error-free nucleic acid molecules. In order to make this even more clear, independent claim 13 has been amended herein to use the term “combining”, rather than “recombining”, which the Applicants believe helps to more particular point out and distinguish the “removing step of step c) from the “combining” step of step d). No new matter is added by this amendment, entry of which is therefore respectfully requested. Reconsideration and withdrawal of the rejection of claim 13, as amended, under 35 U.S.C. 112, second paragraph, is therefore respectfully requested.

Dependent claims 15, 21, 26, and 29 are rejected as being indefinite because “[s]ince the claim does not limit that the errors of the error-containing nucleic acid molecules are mismatches, it is unclear how a mismatch binding protein can prevent amplification of any kind of error-containing nucleic acid molecule such as an error-containing nucleic acid molecule which does not contain mismatches”. Dependent claims 15, 21, 26, and 29 have herein been amended in order to adopt the Examiner’s suggestion and recite that the errors are mismatches. No new matter is added by these amendments, entry of which is therefore respectfully requested. The Applicants therefore believe that the amendments made herein to claims 15, 21, 26, and 29 have resolved the indefiniteness issue raised by the rejections, and that claims 15, 21, 26, and 29, as amended herein, meet the requirements of 35 U.S.C. 112, second paragraph. Reconsideration and withdrawal of the rejection of claims 15, 21, 26, and 29 under 35 U.S.C. 112, second paragraph, is therefore respectfully requested.

Dependent claim 21 is also rejected because there is allegedly insufficient antecedent basis for the limitation “the template” because there is no phrase “template” in the base claim (claim 12). The Applicants respectfully traverse this rejection and note that “a template” is explicitly recited in step c) of claim 12 [“c) correcting errors in said plurality or pool by using the error-free nucleic acid molecules in said plurality or pool as a template for repair of said error-containing nucleic acid molecules.”] Reconsideration and withdrawal of the rejection of claim 21 under 35 U.S.C. 112, second paragraph, is therefore respectfully requested.

Because claim 22 is not rejected on any independent grounds, but rather for depending from currently amended independent claim 12, which is in condition for allowance, dependent claim 22 is therefore also in condition for allowance. Reconsideration and withdrawal of the rejection of claim 22 under 35 U.S.C. 112, second paragraph, is therefore also respectfully requested. Because claim 30 is not rejected on any independent grounds, but rather for depending from currently amended independent claim 13, which is in condition for allowance, dependent claim 30 is therefore also in condition for allowance. Reconsideration and withdrawal of the rejection of claim 30 under 35 U.S.C. 112, second paragraph, is therefore also respectfully requested.

The indefiniteness issues being resolved, the Applicants respectfully submit that claims 11-16, 19, 21, 22, 26, 27, 29, and 30 are neither anticipated nor rendered obvious by any art of record, none of which teaches removal and control of errors in nucleic acid molecules having a user-specified sequence and length and synthesized by the specific process of the Applicants, in combination with the other claimed elements of the Applicants invention, as recited in currently amended independent claims 11-13. Allowance of claims 11-16, 19, 21, 22, 26, 27, 29, and 30 is therefore respectfully requested.

**V. Amendments and Remarks regarding additional concerns raised by the Examiner during the Interview**

During the Interview conducted on May 14, 2010, the Examiner raised three additional concerns: (1) that the use of the term “arbitrary” in independent claims 11-13 was unclear; (2) that the distinction between “error-free” nucleic acid molecules” and “error-containing nucleic acid molecules” in step b) of independent claims 11-13 was unclear; and (3) that it was not clear whether the “first immobilized nucleic acid” and “second immobilized nucleic acid” in independent claims 11-13 were identical or different.

With respect to concern (1), that the use of the term “arbitrary” was unclear, the Applicants have herein amended independent claims 11, 12, and 13 to remove the term “arbitrary” and replace it with “a”. No new matter has been added by these amendments, entry of which is respectfully requested. With respect to concern (2), that the distinction between “error-free” nucleic acid molecules” and “error-containing nucleic acid molecules” was unclear, the Applicants have herein amended step b) of independent claims 11, 12, and 13 to explicitly recite what was already implied by the existing language of each of the claims when taken as a whole, that the error-free nucleic acid molecules are synthesized nucleic molecules that have the user-specified sequence composition and length and the error-containing nucleic acid molecules are synthesized nucleic molecules that do not have the user-specified sequence composition and length. No new matter has been added by these amendments, entry of which is respectfully requested.

With respect to concern (3), that it is not clear whether the “first immobilized nucleic acid” and “second immobilized nucleic acid” are identical or different, the Applicants respectfully reply that the “first immobilized nucleic acid” and “second immobilized nucleic acid” as claimed may be either identical or different, and that they are sufficiently well-defined by the modifying language already recited in the claims, i.e., a “first immobilized nucleic acid comprising a first 5’ region and a first 3’ region” and “a second immobilized nucleic acid comprising a second 5’ region and a second 3’ region, wherein said second 3’ region and said first 5’ region comprise identical nucleic acid sequences”. The Applicants note that there are any number of nucleic acid sequences known in the art that meet the criteria recited in the claims, and that such sequences include (but are not limited to) self-complimentary sequences. The Applicants therefore do not feel that any amendments need to be made to the recitation of these elements in order to clarify this point, and further feel that any attempt to make such amendments would only serve to make the claims less clear.

## **VI. Conclusion**

A Request for Continued Examination is being submitted with this response. Claims 11-13, 15, 21, 26, and 29 have been amended. No new matter is presented by these amendments. The Applicants respectfully submit that claims 11-16, 19, 21, 22, 26, 27, 29, and 30 are now in condition for allowance, which action is now requested. Furthermore, the generic claims being

allowable, the Applicants respectfully request rejoinder and allowance of the nonelected species claims, claims 20, 23-25, and 28.

For this reason, and in view of the foregoing arguments, the Applicants believe that this application is now in condition for allowance, which action is respectfully solicited. Should there remain any unresolved issues, it is requested that the Examiner telephone Norma E. Henderson, Applicants' Attorney, at 603-437-4400, so that such issues may be resolved as expeditiously as possible.

Respectfully Submitted,



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